

METHOD AND APPARATUS FOR PROFILING DATA ADDRESSES

Kosche, et al.

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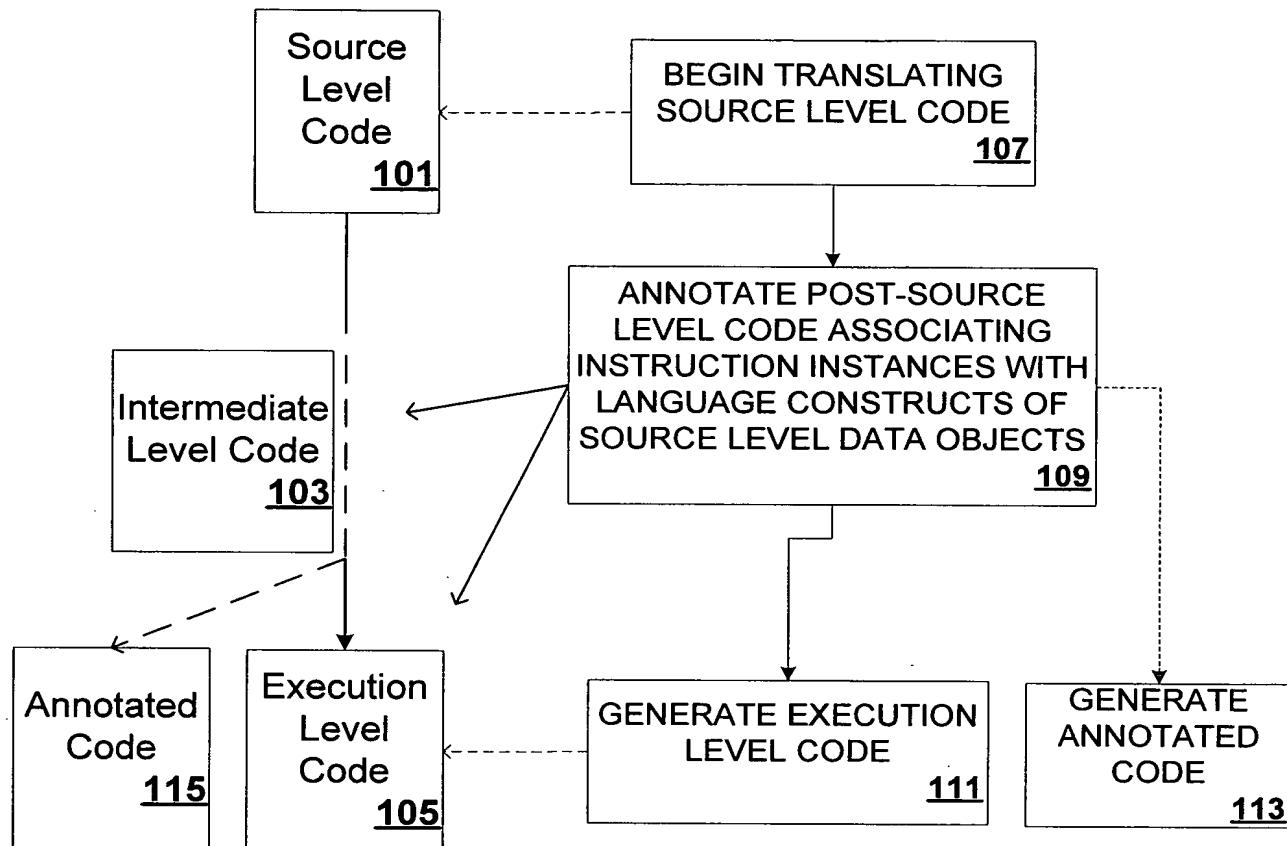


FIG. 1

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ANNOTATED CODE
209



PROGRAM COUNTER : INSTRUCTION : CONSTRUCT INDEX	
<u>201</u>	
0X0024 : LDA [R3]	R5 : 0
	<u>203</u>
0X0040 : LDU [R4 + 5]	R8 : 2
	<u>205</u>
	.
	.
	.

FIG. 2A

LANGUAGE
CONSTRUCT
INDEX TABLE
231



INDEX	LANGUAGE CONSTRUCT	ADDRESS
0	STRUCT TREE	0X02000000
1	INT TREE.LEAFS	0X02000020
2	STRUCT TREE.NODE	0X02000100
...		

FIG. 2B

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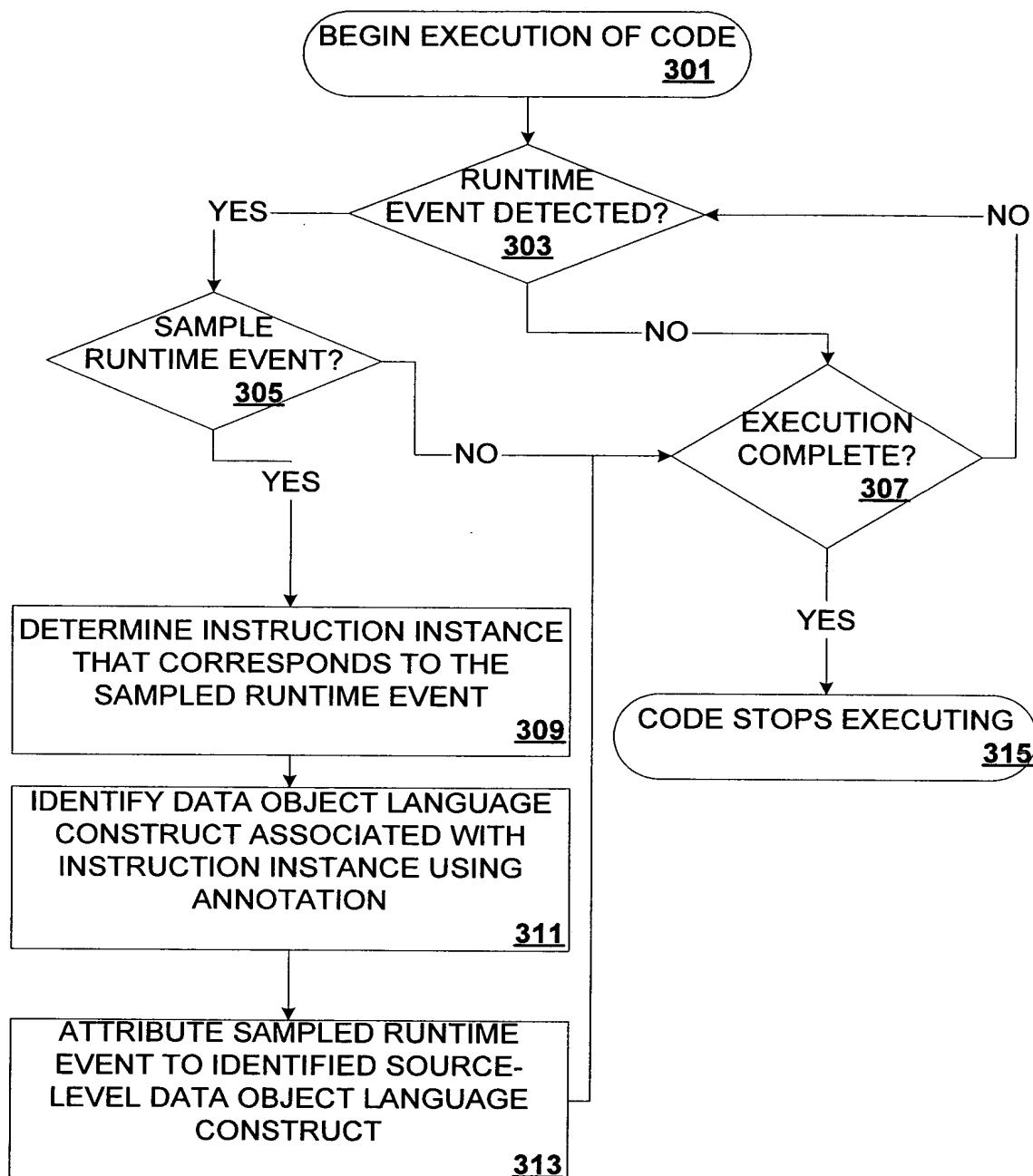


FIG. 3

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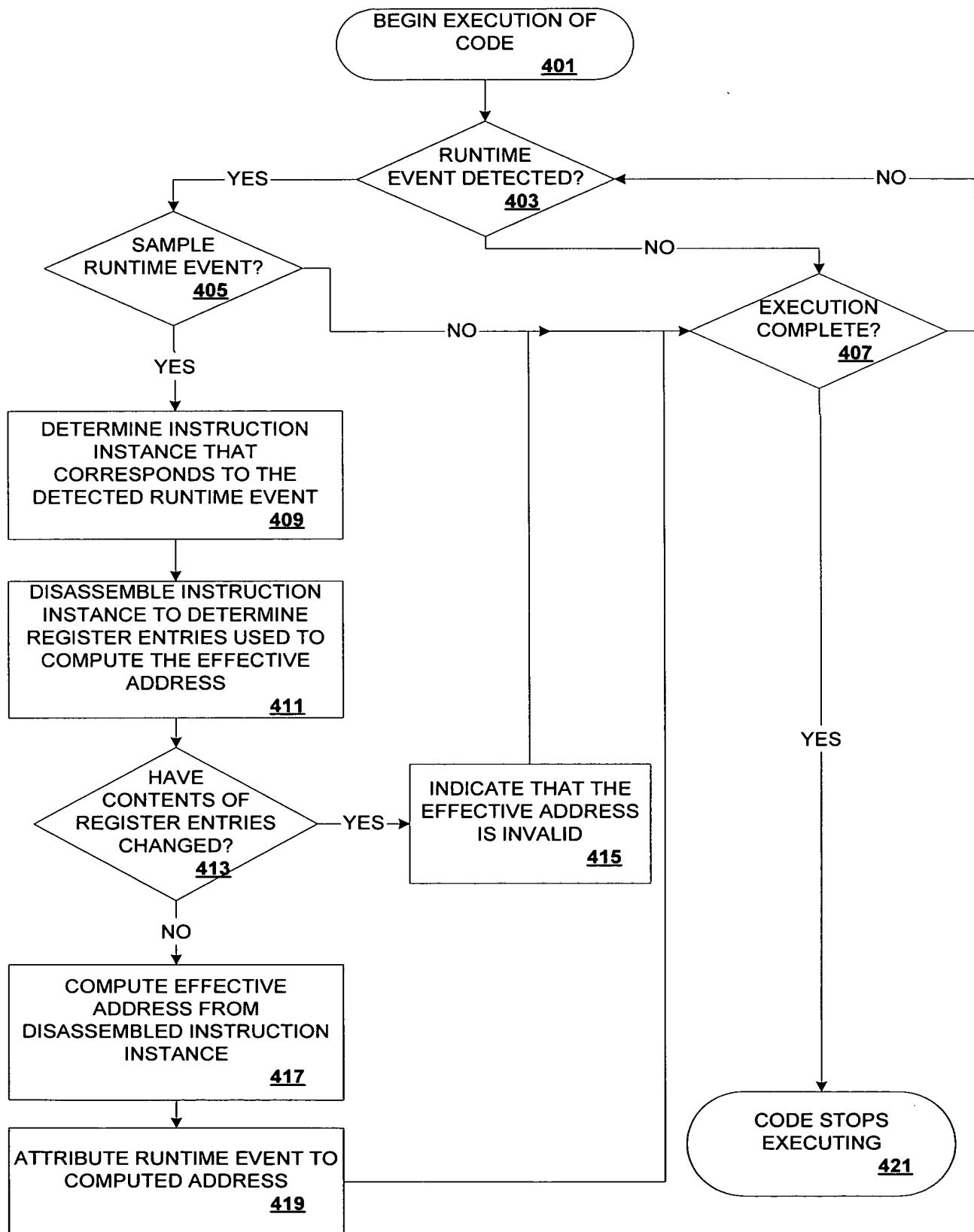


FIG. 4

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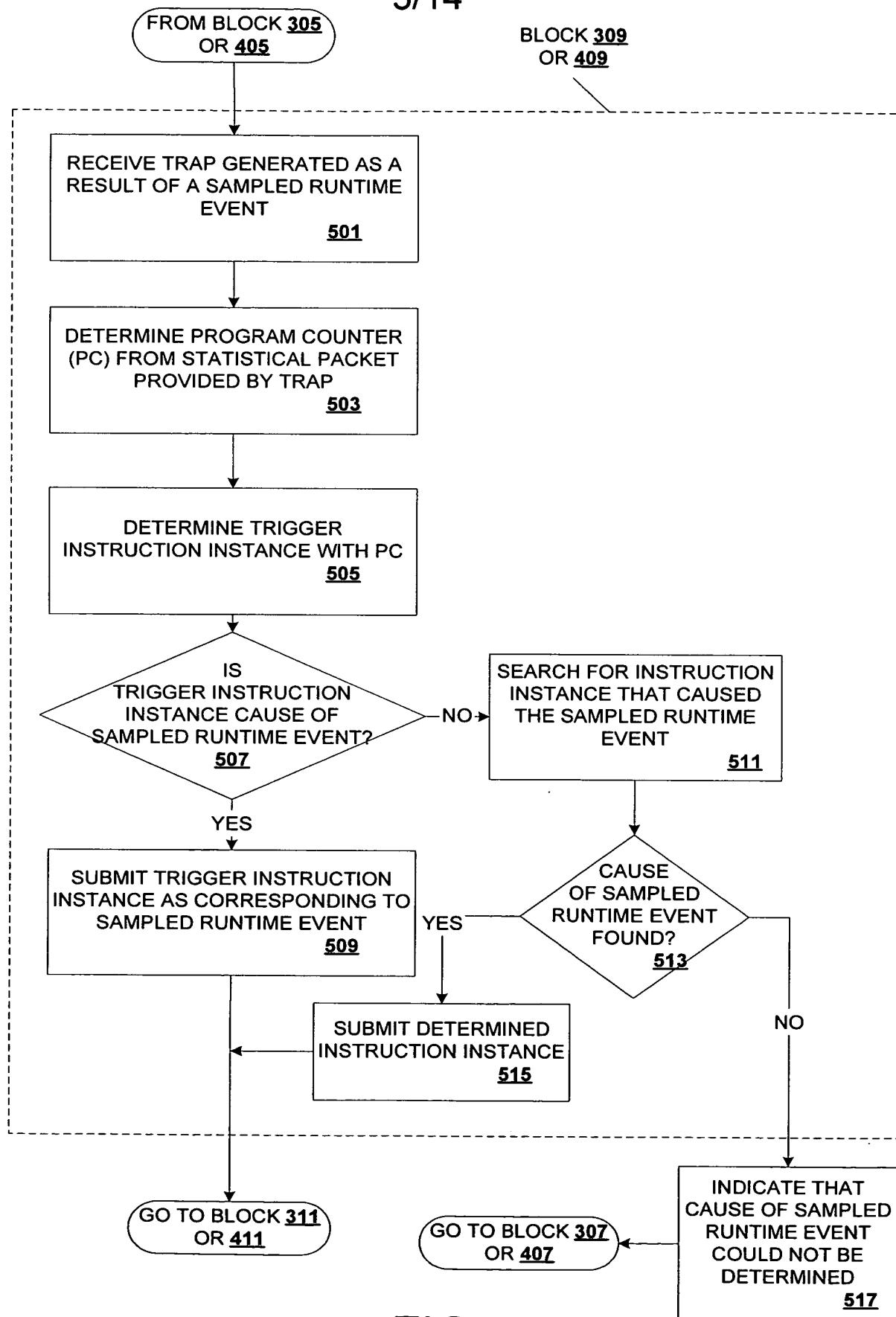


FIG. 5

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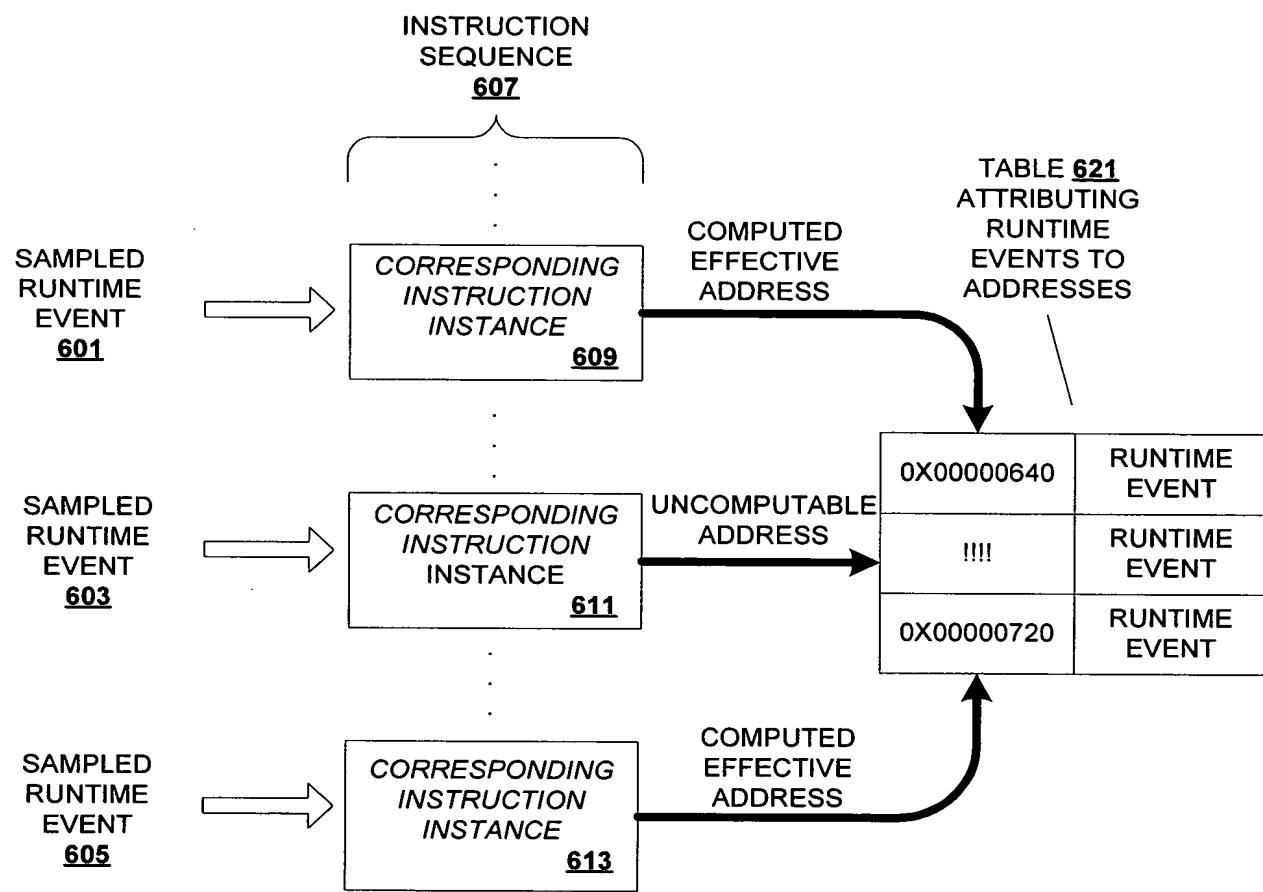


FIG. 6

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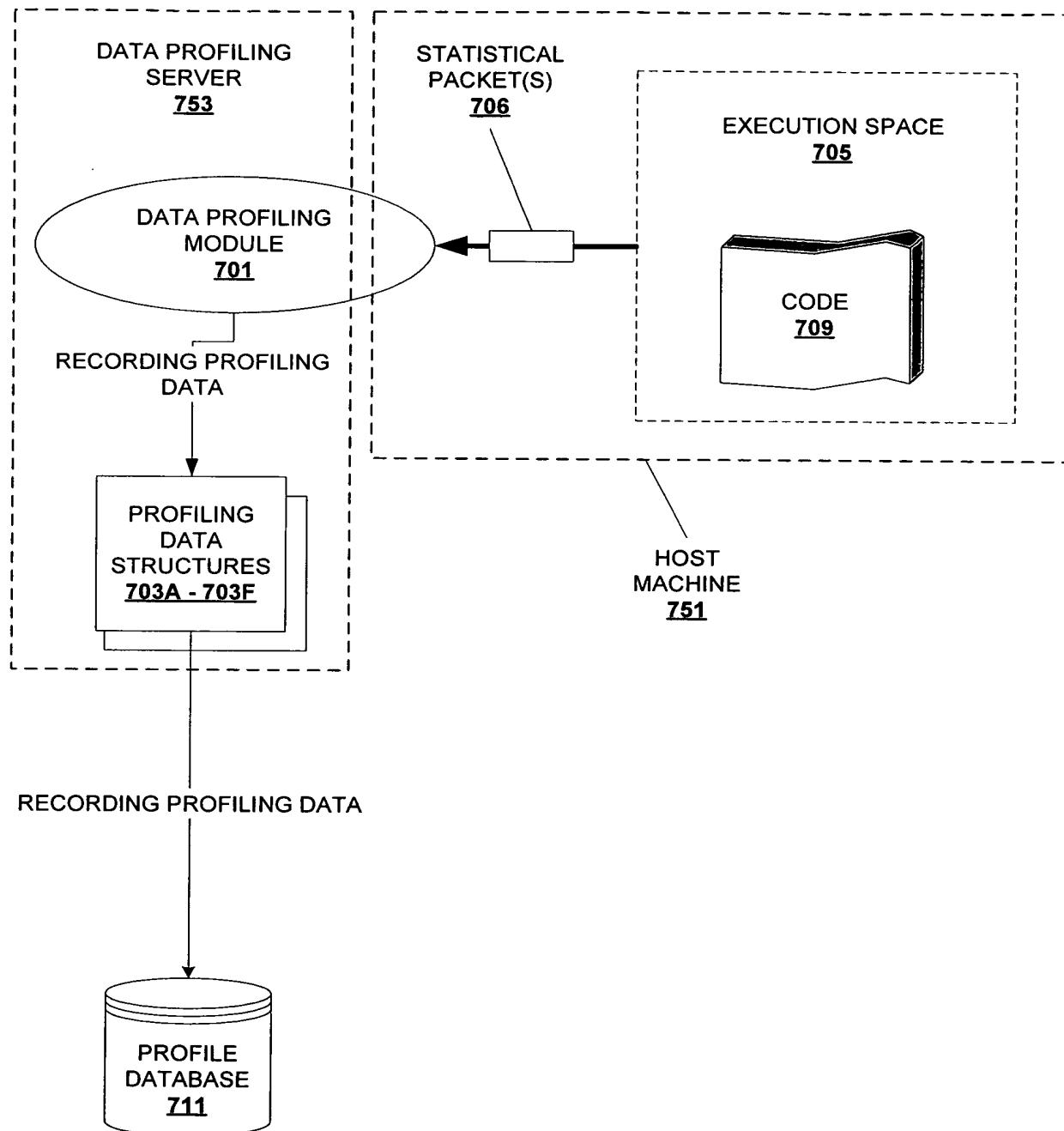


FIG. 7

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SOURCE-LEVEL
DATA OBJECT
LANGUAGE
CONSTRUCT
INDEXED PROFILE
DATA STRUCTURE
801

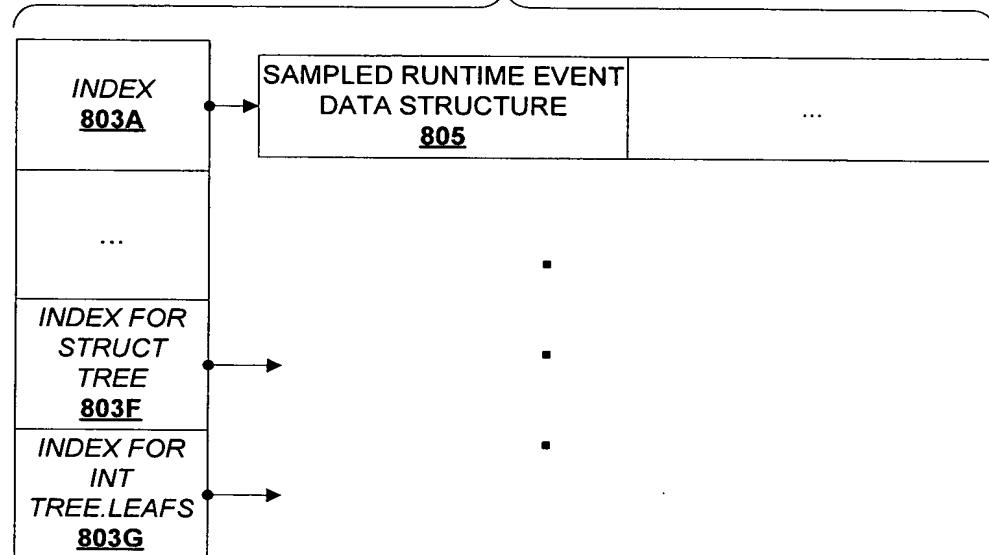


FIG. 8A

ADDRESS
INDEXED PROFILE
DATA STRUCTURE
821

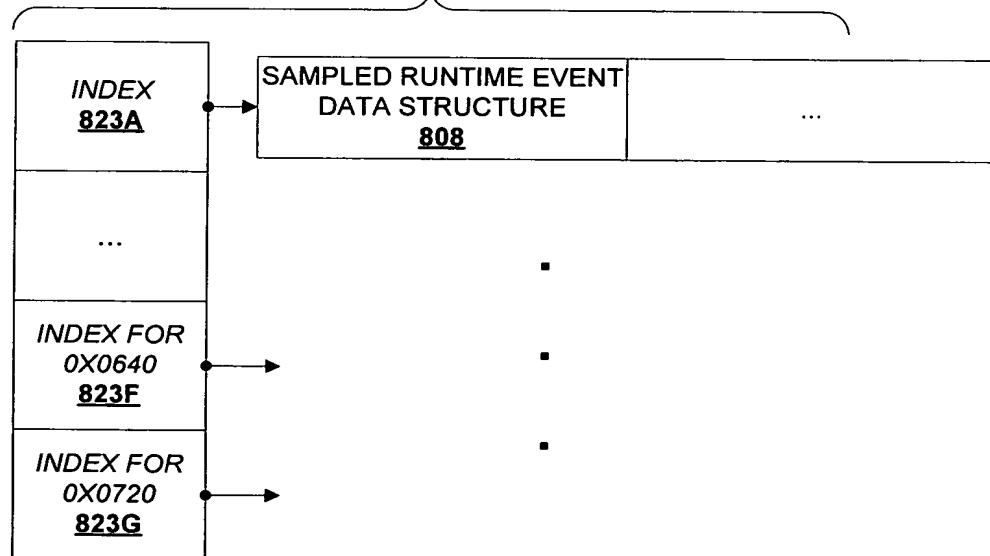


FIG. 8B

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SAMPLED RUNTIME EVENT DATA
STRUCTURE

900

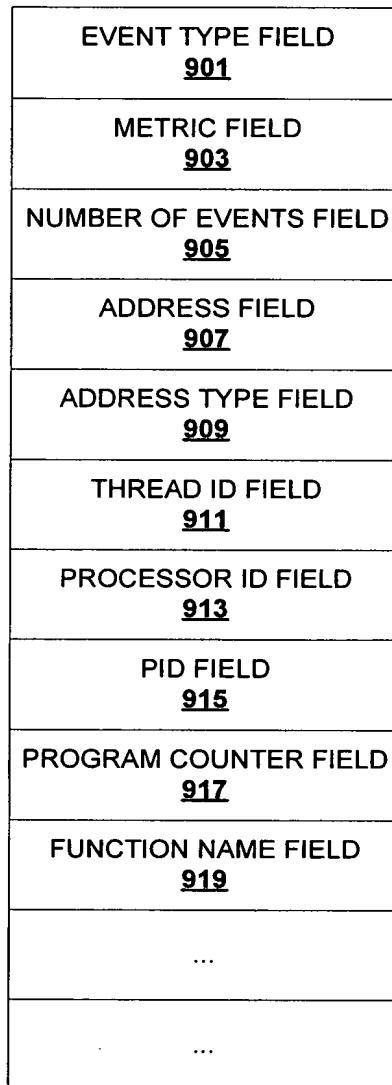


FIG. 9

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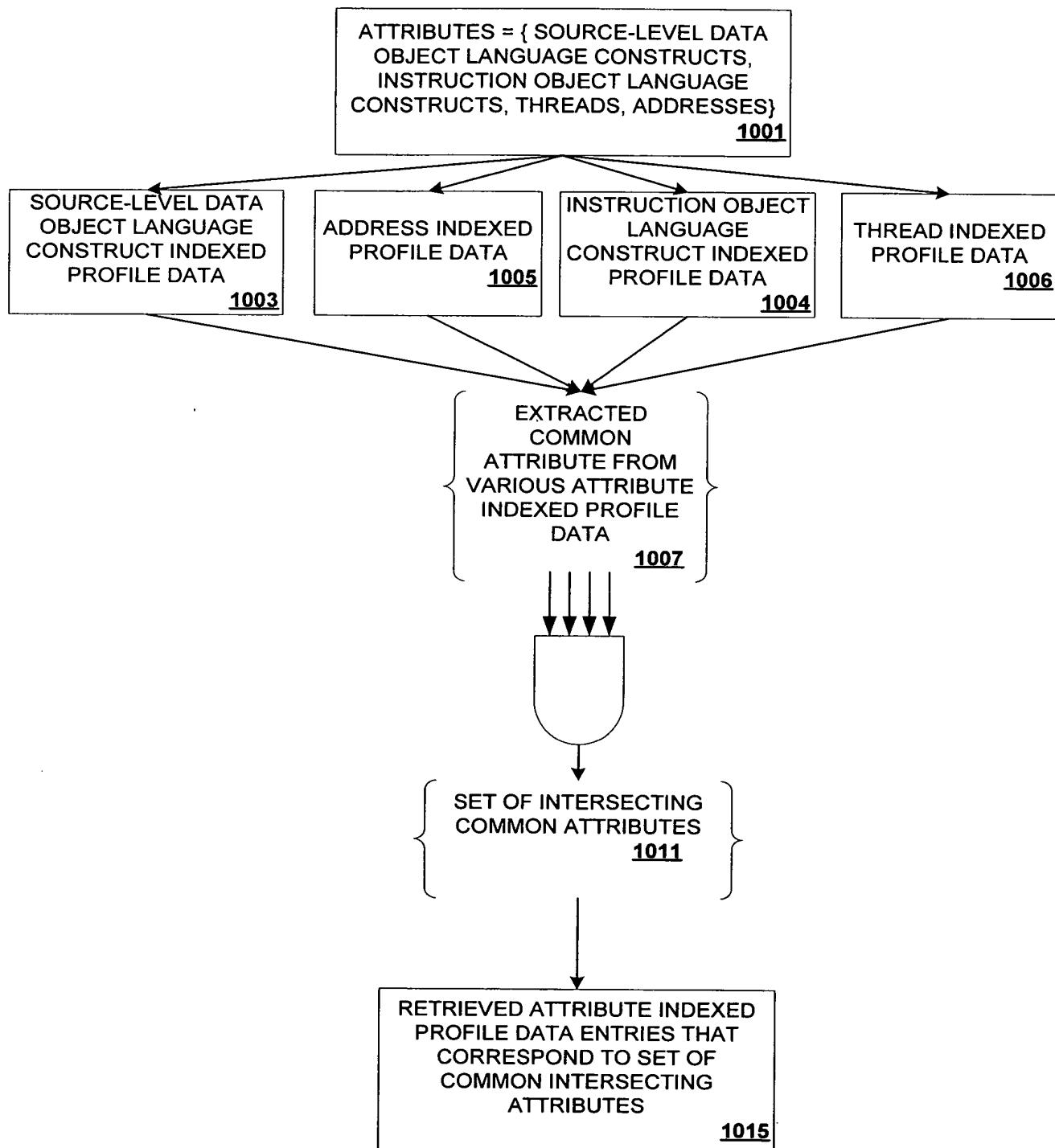


FIG. 10

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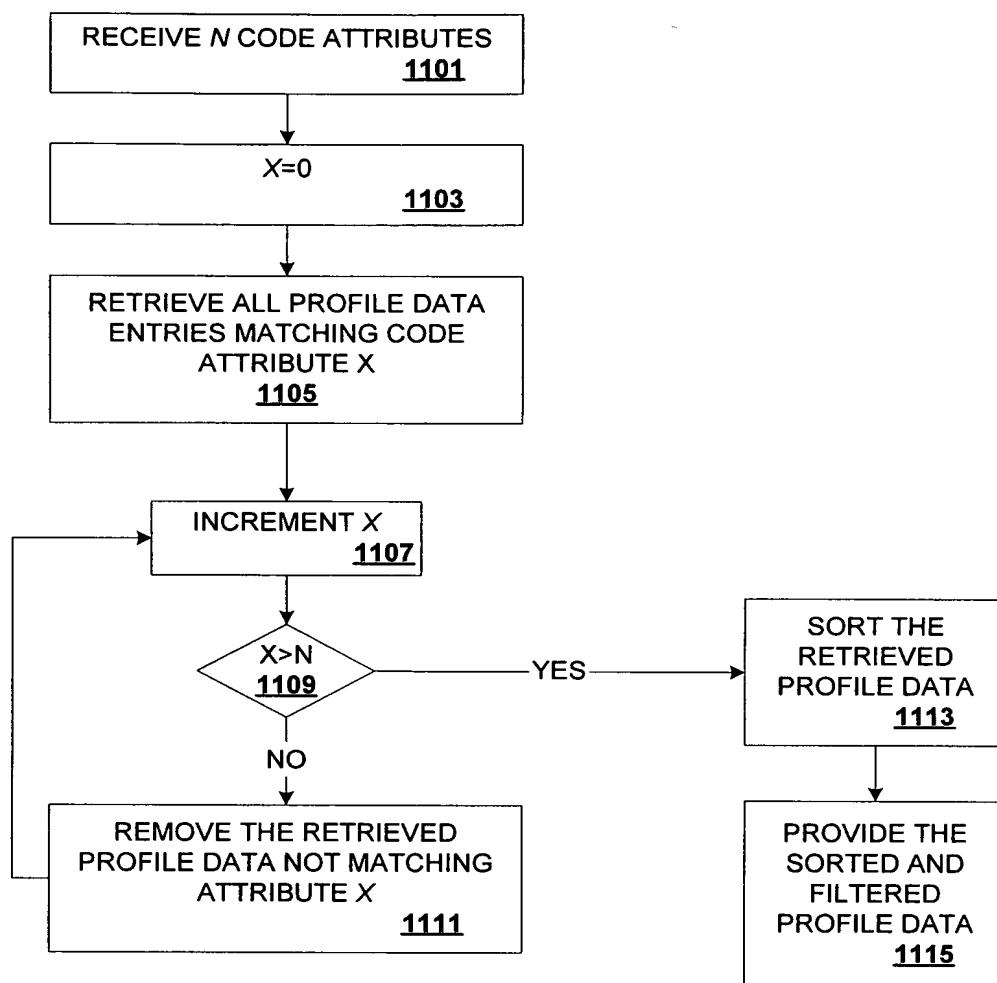


FIG. 11

DATA STALL SECONDS	ADDRESS	ADDRESS TYPE
549.909	<TOTAL>	
75.303	0X02000640	PHYSICAL
14.270	0X00000720	PHYSICAL
...	...	
...	...	VIRTUAL

FIG. 12

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E\$ STALL SECONDS	DATA E\$ READ MISSES %	DATA E\$ REFERENCES %	DATA DTLB MISSES %	SOURCE-LEVEL DATA OBJECT LANGUAGE CONSTRUCT
297.569	100.00	100.00	100.00	<TOTAL>
166.402	59.4	37.3	70.0	TREE
124.601	39.5	41.4	29.7	TABLE
...
...

FIG. 13A

E\$ STALL SECONDS	DATA E\$ READ MISSES%	DATA E\$ REFERENCES %	DATA DTLB MISSES %	SOURCE- LEVEL DATA OBJECT LANGUAGE CONSTRUCT
166.402	59.4	37.3	70.0	TREE
29.1	8.2	3.7	0.1	INT TREE.LEAFS
...
...

FIG. 13B

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PROFILE DATA FOR FUNCTIONS

E\$ STALL SECONDS	E\$ CYCLES %	FUNCTIONS
785.235	100.00	<TOTAL>
39.262	5.00	STACK_CONTROL
38.477	4.9	GARBAGE_COLLECT
...
...

FIG. 14A

PROFILE DATA FOR SOURCE- LEVEL DATA OBJECT LANGUAGE CONSTRUCTS

E\$ STALL SECONDS	E\$ CYCLES %	SOURCE- LEVEL DATA OBJECT LANGUAGE CONSTRUCTS
785.235	100.00	<TOTAL>
117.785	15.00	TOS
94.239	12.00	NUM_ENTRIES
...
...

FIG. 14B

PROFILE DATA FOR FUNCTIONS FILTERED BY TIME

E\$ STALL SECONDS	E\$ CYCLES %	TIME IN SECONDS
785.235	100.00	<TOTAL>
15.704	2.00	0 - 10
23.557	3.00	10 - 20
196.309	25.00	20 - 30

FIG. 14C

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PROFILE DATA FILTERED BY TIME (20 - 30 SECONDS) AND FUNCTION

E\$ STALL SECONDS	E\$ CYCLES %	E\$ CYCLES % FOR SELECTED PARAMETERS	FUNCTIONS
196.309	25.00	100.00	<TOTAL>
31.409	4.00	16.00	GARBAGE_COLLECT
5.889	0.75	3.00	STACK_CONTROL
...

FIG. 14D

PROFILE DATA FILTERED BY TIME (20 - 30 SECONDS)
FOR FUNCTION GARBAGE_COLLECT

E\$ STALL SECONDS	E\$ CYCLES %	E\$ CYCLES % FOR SELECTED PARAMETERS	SOURCE-LEVEL DATA OBJECTS
31.409	4.0	100.00	<TOTAL>
29.839	3.8	95.00	STRUCTURE H
...
...

FIG. 14E

PROFILE DATA FILTERED BY TIME (20 - 30 SECONDS) FOR
STRUCTURE H OF FUNCTION GARBAGE_COLLECT

E\$ STALL SECONDS	E\$ CYCLES %	E\$ CYCLES % FOR SELECTED PARAMETERS	H ELEMENTS [OFFSET]
29.839	3.8	100.00	<TOTAL>
14.9195	1.9	50.0	H.HEAD [0]
0.0	0.0	0.0	H.TAIL [4]
...
14.9195	1.9	50.0	H.VOLUME [158]

FIG. 14F